REMARKS

Claims 1 and 3-15 are currently pending in the above-identified patent application; claims 6-15 are withdrawn from consideration. Claims 1 and 3 have been amended to further distinguish the present claimed invention from Kaneto et al. and Satoh et al., respectively. The limitation that the conductivity of the polymer of the present invention is greater than 150 S/cm is well out of the range of conductivities (about 80-100 S/cm) taught by Kaneto et al. (See, e.g., Col 8, lines 18-20 of Kaneto et al.), while the limitation of newly amended claims 1 and 3 to polymers other than polypyrrole distinguishes these claims from the teachings Satoh et al. which discloses high conductivity only for polypyrrole films (See e.g., page 289, lines 2-7). Support for these amendments derives from page 14, lines 18-20, of the subject Specification, as originally filed, which teaches that the conductivity of unstretched polyaniline films prepared in accordance with the present invention is about 150 S/cm. No new matter has been added by these changes.

Applicants believe that the present amendments place the subject patent application in condition for allowance or appeal.

In the subject Office Action the Examiner rejected claims 1 and 3 under 35 U.S.C. 103(a) as being unpatentable over Satoh et al. ("Dependences of Electrical and Mechanical Properties of Conducting Polypyrrole Films on Conditions of Electrochemical Polymerization in an Aqueous Medium") in view of Kaneto et al. (U.S. Patent No. 5,556,700), since the Examiner asserted that Satoh et al. teaches the preparation of polypyrrole films under various polymerization conditions and increasing the electrical conductivity to higher than 500 S/cm by selecting these conditions. The Examiner continued by stating that the high-conductivity conjugated polymer is prepared from a monomer selected from the group consisting of aniline, pyrrole, thiophene, phenylene vinylene, and derivatives thereof, and the Satoh et al. do not further describe operations of a specific actuator containing this material or its derivatives which expands linearly.

The Examiner then stated that Kaneto et al. note in the Background Of The Invention that an electrochemical actuator comprising a high-conductivity

conjugated polymer wherein said element actuates by linear extension/contraction, but that Kaneto et al. does not note how the high-conductivity polymer is prepared nor its electrical conductivity range. The Examiner then concluded that it would have been obvious to use the high-conductivity polymer of Satoh et al. in the device described in Kaneto et al. in order to achieve the high electrical and mechanical properties such an electrical conductivity material allows.

Claims 4 and 5 were rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh et al. in view of Kaneto et al., since the Examiner states that although the combination does not note specific derivatives that generate high-conductivity conjugated polymers when polymerized, Kaneto et al. in the Detailed Description Of The Invention teaches the use of derivatives including alkyl in an electrochemical device, which device flexes but does not apparently expand in a linear direction. The Examiner then concluded that it would have been obvious to one having ordinary skill in the art to employ the derivative noted by Kaneto et al. in their invention in the combined device noted above because these materials can be made into controllably deformable actuators as noted by Kaneto et al.

Applicants respectfully disagree with the Examiner for the reasons to be set forth hereinbelow. Reexamination and reconsideration are requested.

Turning now to the rejection of all pending claims under 35 U.S.C. 103(a), applicants have failed to locate where in Satoh et al. it is taught that high-conductivity conjugated polymer is prepared from a monomer selected from the group consisting of aniline, pyrrole, thiophene, phenylene vinylene, and derivatives thereof. Applicants believe that Satoh et al. teaches high-conductivity only for polypyrrole polymers.

Figure 6 of Kaneto et al. shows that a maximum conductivity of $\leq$ 100 S/cm is achieved by protonation of the polyaniline film (See also, Col. 8, lines 18-20 of Kaneto et al.), whereas claim 1 of the present claimed invention, as amended, requires an electrical conductivity of $\geq$ 150 S/cm. Moreover, as stated by the Examiner, Kaneto et al. teaches the use of derivatives including alkyl in an electrochemical device, which device flexes, but does not apparently expand in a

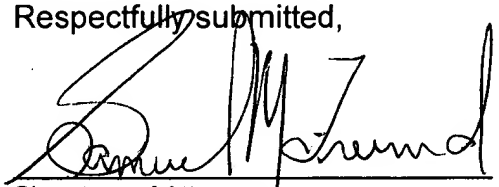
linear direction. In fact, applicants have found no teaching in Kaneto et al. of linear extension/contraction.

Applicants believe that there would be no reason for a practitioner of the invention of Kaneto et al. to seek the higher polymer conductivities identified in Satoh et al., since the actuators of Kaneto et al. appear to perform their intended bending functions with conductivities ≤ 100 S/cm, and Satoh et al. teaches higher conductivities for only polypyrroles and not for polyaniline. Therefore, applicants believe that there would be no motivation to combine the Kaneto et al. reference with Satoh et al.

For these reasons, applicants respectfully believe that the Examiner has improperly combined Kaneto et al. with Satoh et al. in the rejection of all pending claims under 35 U.S.C. 103(a), and has therefore failed to make a *prima facie* case for an obviousness-type rejection.

For the reasons set forth hereinabove, applicants believe that claims 1 and 3-5, as amended, are in condition for allowance or appeal, the former action by the Examiner at an early date being earnestly solicited. Reexamination and reconsideration are respectfully requested.

Respectfully submitted,



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